

# GLOBAL CLIMATE HIGHLIGHTS

## MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF MAY 29, 1993

### 1. Hawaii:

#### MOISTURE DEFICITS DECLINE AS DRIER TIME OF YEAR APPROACHES.

Although little or no precipitation fell last week, normals declined as the drier time of the year approached, reducing six-week rainfall shortages [Ended at 15 weeks].

### 2. Northwestern North America:

#### UNUSUALLY MILD WEATHER CONTINUES.

Temperatures averaged 3°C to 7°C above normal across most of Alaska, western Canada, and the Pacific Coast of the United States. Highs reached 25°C as far north as Fairbanks, AK [7 weeks].

### 3. Great Plains:

#### MORE HEAVY RAINS.

Moderate rains of 10 to 40 mm soaked most of the region while heavier amounts (up to 115 mm) drenched scattered locations across parts of southeastern Kansas, Oklahoma, western Missouri, and central and northwestern Iowa. Six-week moisture surpluses reached 130 mm in South Dakota and 150 mm in Oklahoma [15 weeks].

### 4. Southeastern United States:

#### DRY CONDITIONS DEVELOP.

Most locations reported under 20 mm of rain as abnormally dry weather prevailed for the fourth consecutive week [4 weeks]. To the south, torrential rains (up to 250 mm) associated with the season's first tropical depression drenched portions of southern Florida on May 30 and 31 [Episodic Event].

### 5. Brazil, Bolivia, and Peru:

#### DRYNESS SPREADS.

Little or no rain fell in much of Brazil, except for isolated amounts of 20 to 90 mm along the Atlantic coast. In addition, totals in eastern Peru and northern Bolivia were generally below 10 mm for the fourth week in a row, allowing moisture deficits to expand westward [14 weeks].

### 6. Northern and Eastern Europe:

#### WARM AND DRY WEATHER CONTINUES TO PREVAIL.

Much of Russia received 10 to 20 mm of rain while amounts further west approached 30 mm. Six-week precipitation deficits of 50 to 140 mm were common across the region [7 weeks]. Weekly temperature departures reached +5°C in parts of Austria and +6°C in Russia [7 weeks].

### 7. Western Sahel:

#### SCANTY RAINFALL REPORTED.

Little or no rain fell on the region, although the southern fringes received 10 to 40 mm [4 weeks].

### 8. Middle East and Northeastern Africa:

#### WET WEATHER PERSISTS, BUT TEMPERATURES MODERATE.

Up to 30 mm of rain dampened the Middle East (where normals are relatively low), creating six-week precipitation surpluses approaching 120 mm in Iran. Meanwhile, above normal temperatures ended the recent cold snap across the Mediterranean. Farther south, Ethiopia and Kenya received 20 to 60 mm of rain, creating six-week surpluses of up to 260 mm in parts of Kenya. In addition, flooding along Somalia's Shabelle River is threatening numerous crops through southern sections of the country, according to press reports [9 weeks].

### 9. South-Central Asia:

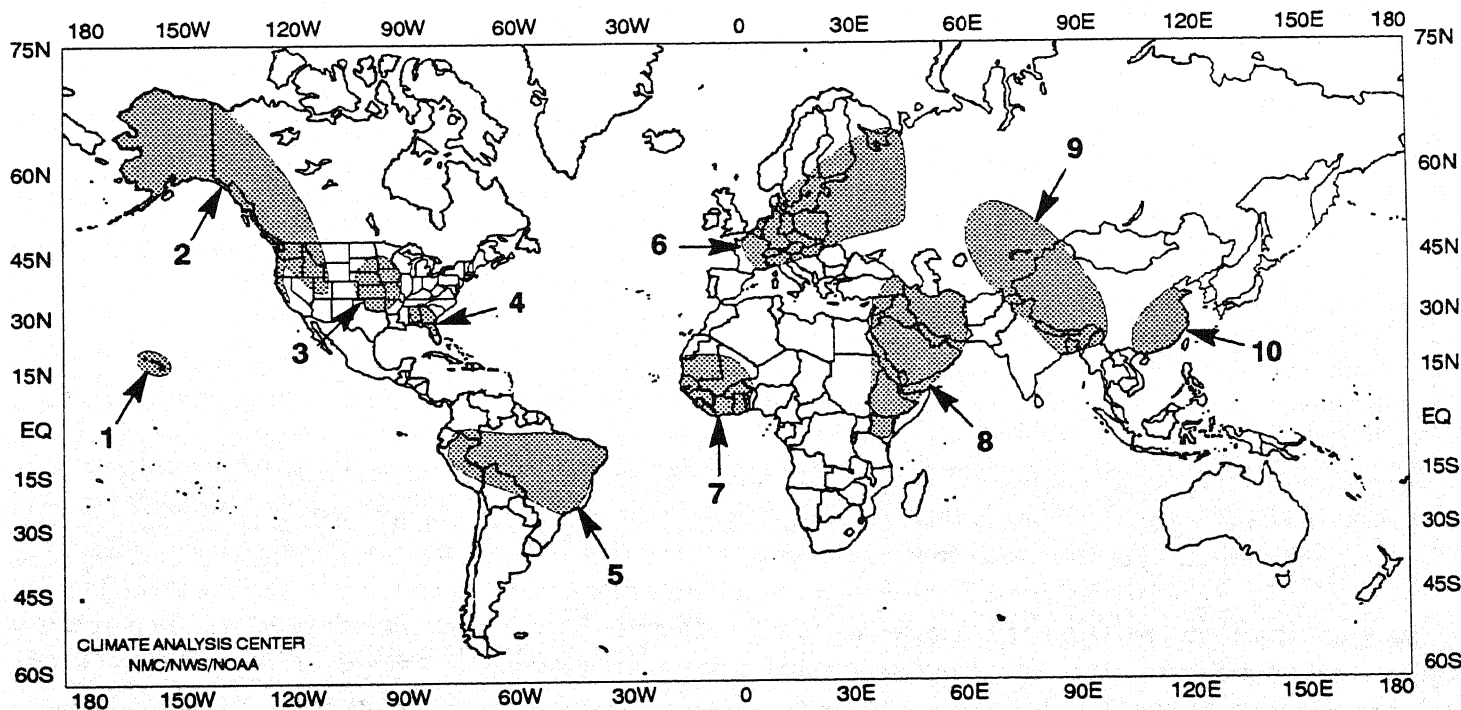
#### COLD SPELL ENDS, BUT MODERATE RAINS CONTINUE.

Temperatures averaged up to 5°C above normal, abruptly ending the cold snap, while 20 to 60 mm of rain dampened the region. Six-week precipitation excesses reached 120 mm in parts of Kazakhstan. Farther south, flash floods early in the week washed away hundreds of homes and tens of thousands of trees in northern Afghanistan, according to press reports [9 weeks].

### 10. Eastern China:

#### HEAVY PRECIPITATION PERSISTS.

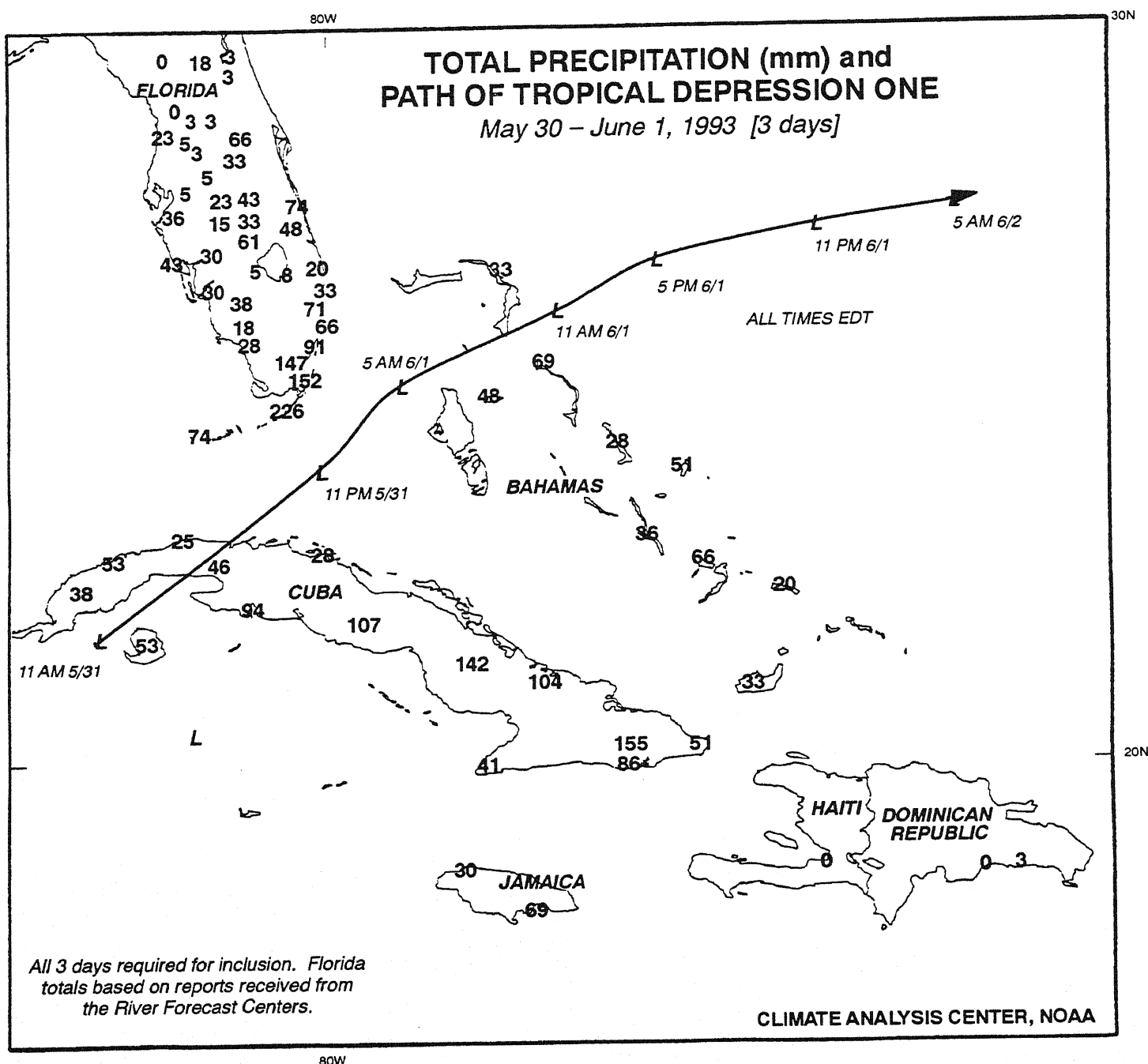
Up to 250 mm of rain drenched the eastern provinces of China; however, drier conditions were reported on the western fringes of the region. Many locations reported six-week precipitation surpluses of 100 to 300 mm [7 weeks].



#### EXPLANATION

TEXT: Approximate duration of anomalies is in brackets. Precipitation amounts and temperature departures are this week's values.  
MAP: Approximate locations of major anomalies and episodic events are shown. See other maps in this Bulletin for current two week temperature anomalies, four week precipitation anomalies, long-term anomalies, and other details.

# GLOBAL CLIMATE HIGHLIGHTS FEATURE



**THE FIRST ORGANIZED TROPICAL SYSTEM OF 1993 IN THE WESTERN ATLANTIC DRENCHES MUCH OF CUBA, SOUTHERN FLORIDA, AND THE BAHAMAS.** Tropical Depression One formed 13 hours before the official start of the hurricane season (June–November) in the western Atlantic, tracked northeastward during the ensuing two days, and succumbed to strong upper-level shear before attaining tropical storm strength on June 2. Sustained winds remained below 55 kph throughout the life of the system, which subsequently generated little wind or storm surge damage; however, strong thunderstorms associated with the depression dumped very heavy rains on some locations, generating localized flash flooding, according to press reports. Parts of central and eastern Cuba and southeastern Florida received 100–226 mm of rain, much of which fell within 24 hours. The largest amounts were recorded in the northern Florida Keys.

# UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

## FOR THE WEEK OF MAY 23 – 29, 1993

This rather uneventful weather week saw two low pressure systems track through the northern tier of states east of the Rockies while a Pacific Ocean disturbance affected the West. The two eastern storm systems and their associated fronts provided most of the significant weather from the High Plains eastward. Scattered showers and thunderstorms, some accompanied by isolated severe weather and inundating cloudbursts, were observed in association with these systems. Nearly 3 1/2 inches of rain drenched Corpus Christi, TX on Sunday as localized flooding swept through parts of Wilson, Atascosa, Fayette, and Gonzales Counties in Texas. Around mid-week, wind gusts of over 80 mph blasted parts of the Denver, CO vicinity, and similar winds were observed north of Venice, FL on Friday. The first day of the weekend ended with up to five inches of rain deluging Haskell City, TX and portions of southeastern Kansas, submerging old Highway 109 north of Humboldt, KS. Meanwhile, locally heavy downpours combined with a rapidly melting mountain snowpack to continue river flooding problems in parts of New Mexico, Colorado, Utah, and Idaho. Another abnormally mild week was reported across Alaska, where warmer than normal conditions date back to early February, while short-term moisture deficits decreased through Hawaii as normals declined with the approach of the Islands' drier time of year.

The week began with a storm system moving through the Great Lakes and into southeastern Canada, dragging its trailing cold front quickly through the northeastern quarter of the country. The southward movement of the front, however, was considerably more slow, with the front lingering across the Southeast, Gulf Coast States, southern Great Plains, and central Rockies and High Plains into mid-week. Showers and thunderstorms along and ahead of the frontal system produced heavy rain and large hail across portions of Texas and spawned two small tornadoes in Illinois. Wind gusts up to 50 mph downed trees and power lines near Edinburg, TX, golfball-sized hail pelted the foothills of southern Colorado, and downpours dropping up to three inches of rain in two hours resulted in minor flooding in Mobile County, AL and in the New Orleans, LA vicinity. In addition, a waterspout became a tornado when it moved onto a beach at Gautier, MS, causing minor damage. On Sunday, two new daily record lows were established in the central Gulf Coast and the Virginia Piedmont before a chilly pocket of air was eroded by southerly winds ahead of the aforementioned system. In contrast, strong southerly winds in advance of the Pacific Ocean storm established two new record highs at Astoria, OR within three days.

During the last half of the week, the Pacific Ocean system moved inland, spreading rare heavy late-May rains from central California northward through western Oregon. The rains combined with a melting Sierra Nevada snowpack to produce the highest river levels along the eastern slopes of the Sierras since 1986. Farther east, however, unfavorably high river levels along parts of the Alamosa (CO), Snake (ID), Provo (UT), and Animas (NM) Rivers as well as Chalk Creek (UT) continued to threaten and occasionally flood nearby valleys, as they have for the past two weeks. The cold front that drifted southward through the southern tier of states meandered slowly through Florida, generating locally heavy thunderstorms that caused isolated damaging wind gusts and street flooding. Meanwhile, a second storm system similar to the previous one trekked across the northern tier of states east of the Rockies, dragging a frontal system through the eastern part of the nation. Along and

ahead of this system, scattered showers and thundershowers brought locally heavy rains, severe weather, and a tornado to parts of the Plains and lower Mississippi Valley, especially on Saturday as an upper-level disturbance enhanced thunderstorm activity across the Plains. Golfball-sized hail was reported in Rapid City and Lead, SD as well as in Dodge City, KS while urban flooding covered portions of Sioux Falls, SD. One tornado was spawned west of Haskell, TX, and winds gusted to 63 mph at San Angelo, TX. By the end of Saturday, 32 reports of damaging winds and/or large hail were received from the Plains, with an additional 19 reports of severe weather through Virginia and North Carolina.

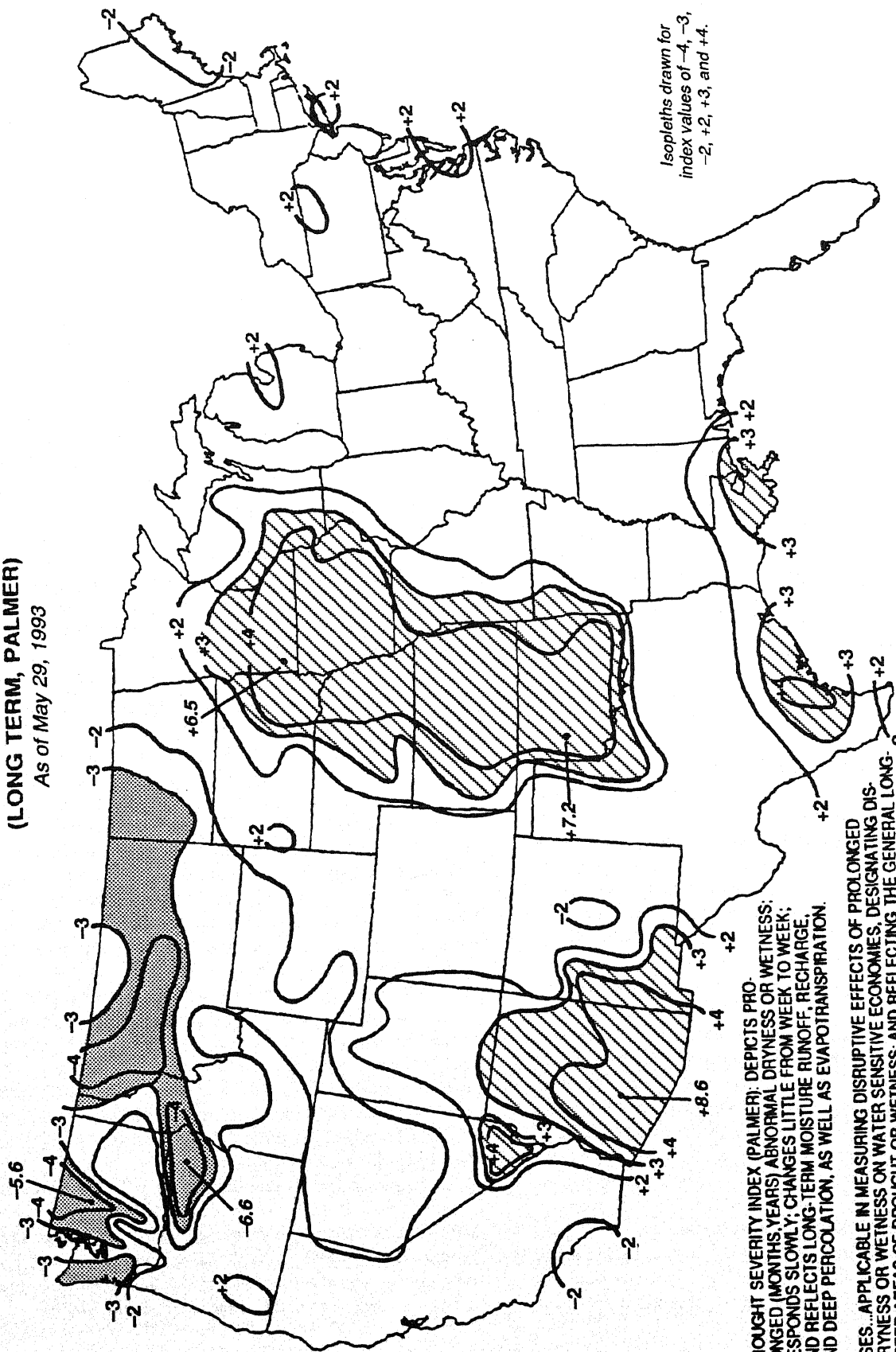
According to the River Forecast Centers, between 2 and 8 inches of rain fell across most of northern California, the upper Mississippi Valley, central and northwestern Iowa, central Indiana, the south-central Great Plains, the southern half of Texas, parts of western Texas, southern Louisiana, parts of Mississippi and northern Alabama, and portions of peninsular Florida. Scattered totals above two inches were also measured in western Oregon, the northern Great Lakes, and northern Maine. Moderate amounts of precipitation were reported through the northern and central Rockies and High Plains, in the remainders of the eastern half of the Great Plains, Mississippi Valley, Great Lakes and Ohio Valley, across the southern Appalachians, in the Carolinas and southern Virginia, through the northern half of New England, and along the southern tier of Alaska. Light precipitation fell elsewhere, except for little or none across the Great Basin, through southern California, in the desert Southwest and southern Rockies, across southwestern Utah, in southern Idaho, from southern Georgia northward to southeastern North Carolina, from eastern Kentucky northeastward through southern New England, and through central and northern Alaska as well as most of Hawaii.

Temperatures averaged above normal along the California coast, across the Pacific Northwest, through the Intermountain West and Rockies, in the central and southern High Plains, in the west-central Great Plains, along the northern and middle Atlantic coasts, through most of Alaska, and across the western half of Hawaii. Departures of +5°F to +12°F covered the immediate Pacific Coast, the northern Intermountain West, most areas from southeastern Pennsylvania to southern New England, and along the southern and western tiers of Alaska. Highs topped 90°F as far north as southeastern Washington, the west-central Great Plains, and southern Maryland while the mercury climbed to 75°F in Fairbanks, AK. Much of eastern and southern Florida did not drop below 70°F at any time during the week.

In contrast, a cooler than normal week was observed through central and eastern California, the northern High Plains, the northern and central Great Plains, most of Texas, and from the Mississippi Valley eastward, except in eastern and southern Florida, the mid-Atlantic, and the eastern North Atlantic Coast. Temperatures averaged 3°F to 8°F below normal in northern California, the Sierra Nevadas, eastern Montana, the northern and east-central Plains, the southern half of Texas, the central and western Great Lakes, the Corn Belt, the central Gulf Coast, and the northern Appalachians. Isolated lows in the twenties were reported late in the week across northern Minnesota, with lows dropping into the thirties as far south as western North Carolina, northern Nebraska, and northern Arizona. Highs never topped 70°F from north-central Montana south-southeastward into west-central Michigan, with a few locations on Michigan's Upper Peninsula failing to climb above 60°F.

# DROUGHT SEVERITY (LONG TERM, PALMER)

As of May 29, 1993



Isopleths drawn for  
index values of -4, -3,  
-2, +2, +3, and +4.

Stippled areas above +3 (very or excessively moist)  
Shaded areas below -3 (severe or extreme drought)

DROUGHT SEVERITY INDEX (PALMER): DEPICTS PRO-  
LONGED (MONTHS/YEARS) ABNORMAL DRYNESS OR WETNESS;  
RESPONDS SLOWLY; CHANGES LITTLE FROM WEEK TO WEEK;  
AND REFLECTS LONG-TERM MOISTURE RUNOFF, RECHARGE,  
AND DEEP PERCOLATION, AS WELL AS EVAPOTRANSPIRATION.

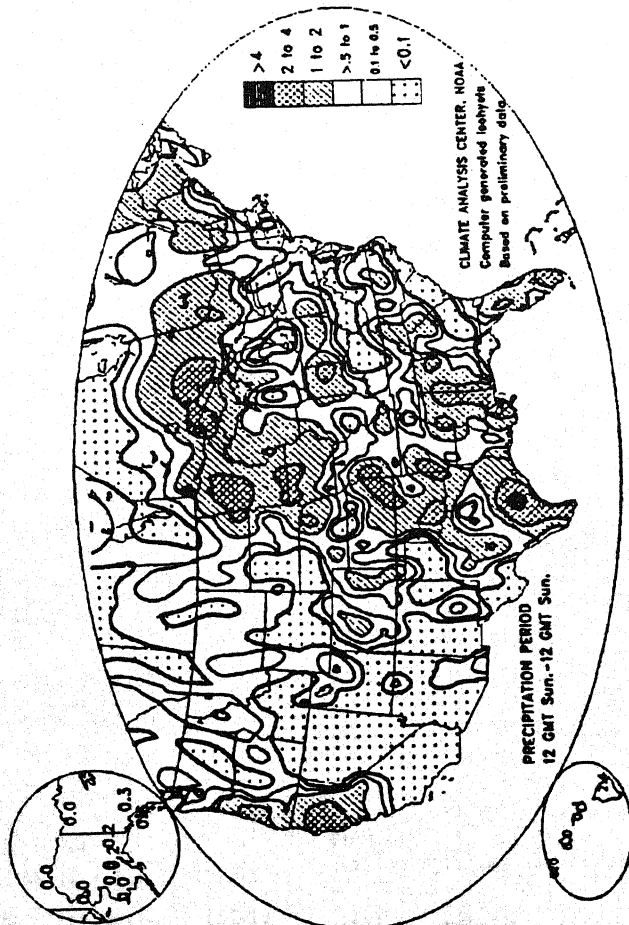
USES... APPLICABLE IN MEASURING DISRUPTIVE EFFECTS OF PROLONGED  
DRYNESS OR WETNESS ON WATER SENSITIVE ECONOMIES, DESIGNATING DIS-  
ASTER AREAS OF DROUGHT OR WETNESS; AND REFLECTING THE GENERAL LONG-  
TERM STATUS OF WATER SUPPLIES IN AQUIFERS, RESERVOIRS, AND STREAMS.

## CLIMATE ANALYSIS CENTER, NOAA

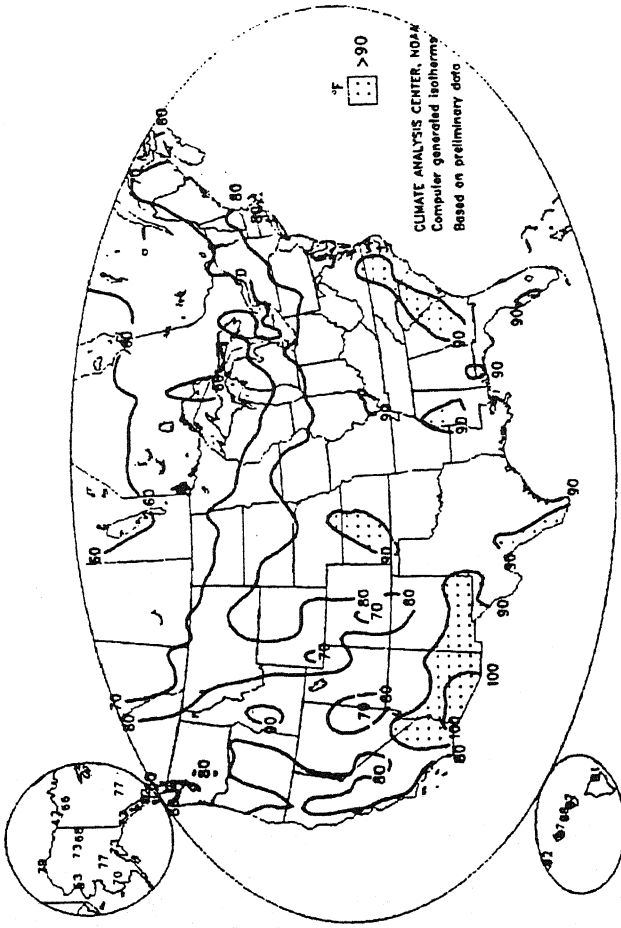
**PALMER DROUGHT INDEX INDICATES LITTLE DROUGHT, BUT LARGE AREAS OF UNUSUALLY WET CONDITIONS ACROSS THE COUNTRY.** On May 29, 1993, the Palmer Drought Index indicated that severe or extreme drought was restricted to parts of the northern Plains, northern Rockies, northern Intermountain West, and Pacific Northwest. In California, only the northeastern and south-  
western corners of the state remain in a moderate drought. Further east, excessively wet conditions plague portions of the desert Southwest, southern Rockies, western and central Gulf Coast, southern Texas, and a large swath of the Great Plains, western Corn Belt, and upper Mississippi Valley. According to the National Climatic Data Center, it has been over six years since severe and extreme drought covered so little of the nation, and almost ten years since a growing-season month (APR-SEP) contained as small an area of severe and extreme drought.

# UNITED STATES WEEKLY CLIMATE CONDITIONS (May 23 – 29, 1993)

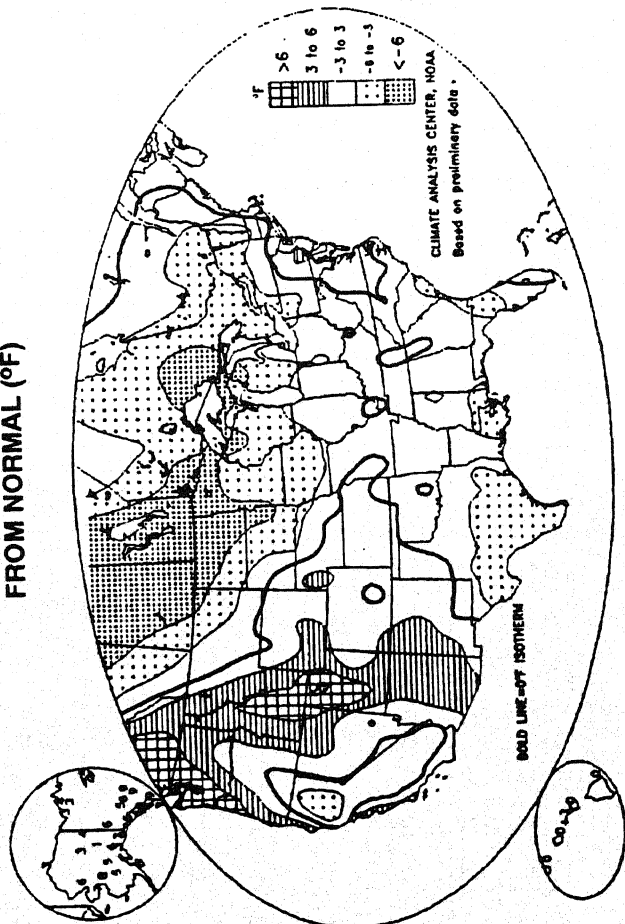
OBSERVED PRECIPITATION (INCHES)



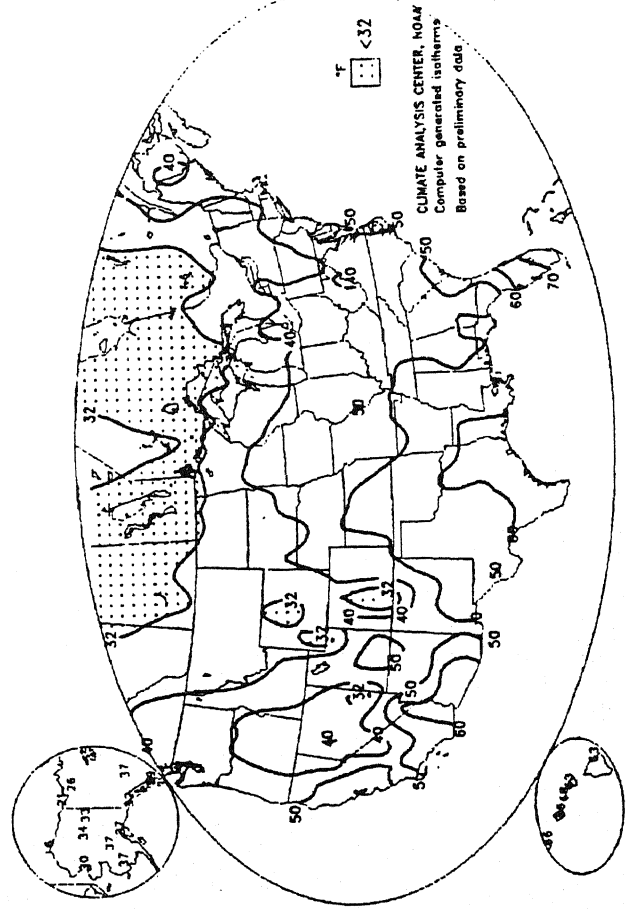
EXTREME MAXIMUM TEMPERATURE (°F)



DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)

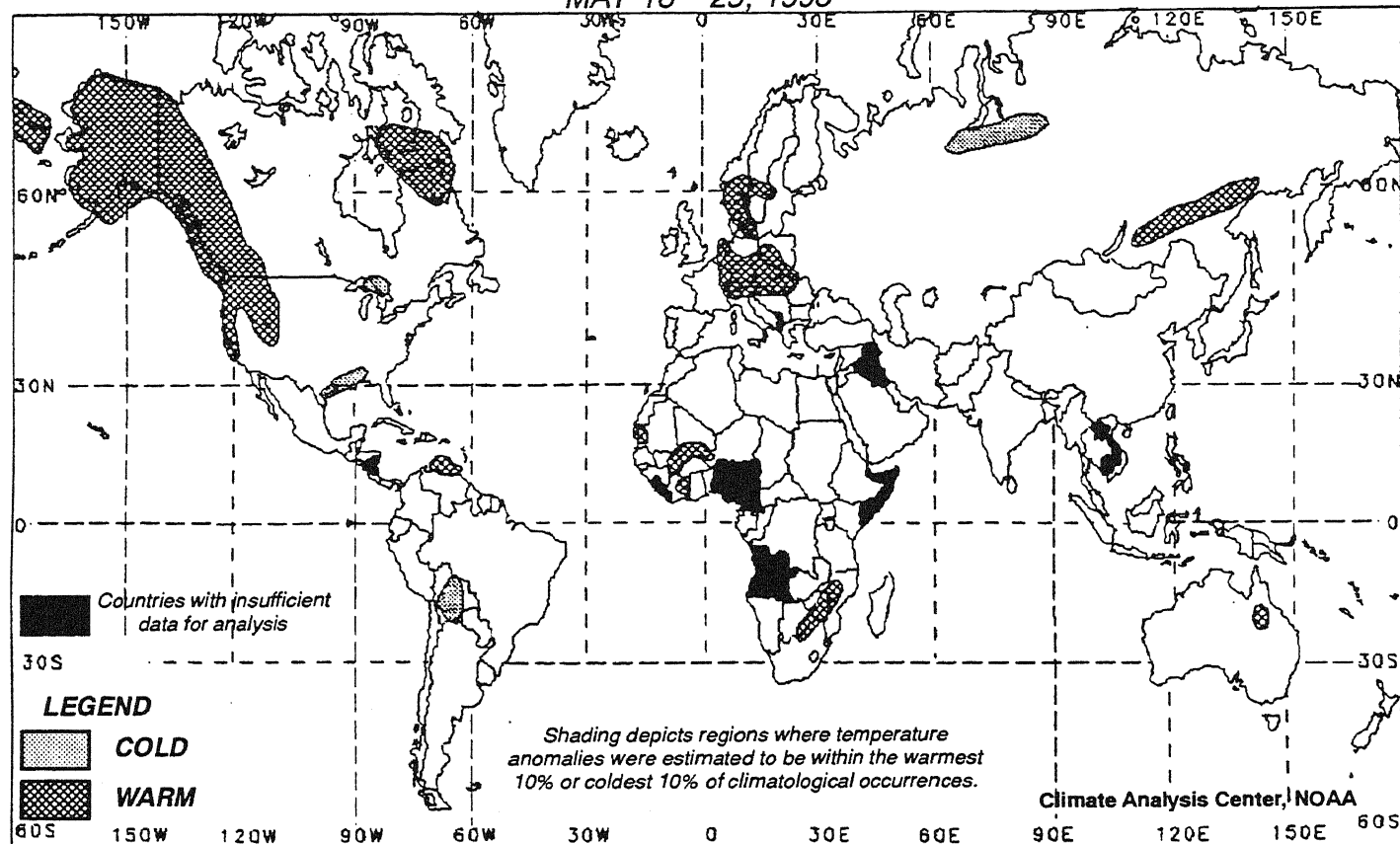


EXTREME MINIMUM TEMPERATURE (°F)



## TWO-WEEK GLOBAL TEMPERATURE ANOMALIES

MAY 16 – 29, 1993



## FOUR-WEEK GLOBAL PRECIPITATION ANOMALIES

MAY 2 – 29, 1993

